CATALOGUING, INDEXING AND ABSTRACTING OF CANADIAN LITERATURE ON ENERGY RESEARCH AND DEVELOPMENT

Final Report
by:

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EXECUTIVE SUMMARY

The Energy Technology Database (ETDB) is a multinational database that contains energy technology literature from 11 countries. The U.S. Department of Energy (DOE) is the publisher and operating agent for the database. In 1987 a project was undertaken under the auspices of the Canadian Centre for Mineral and Energy Technology (CANMET) to provide a Canadian contribution to this database. To this end technical energy literature published in Canada was acquired, catalogued, indexed, abstracted by Micromedia and submitted to the operating agent in machine readable form. The CANMET Library and Documentation Services Division became the Canadian document supplier. This report describes the first three years of the project.

An in-house database was developed at Micromedia Ltd. in the summer of 1987 to produce machine readable records according to the cataloguing, indexing, abstracting and tape production specifications developed by DOE. Production began in September 1987. Since that time the Energy database system has undergone numerous modifications to improve the quality of the output and to streamline production procedures. In 1989 revisions of the ETDB cataloguing rules required a substantial revision of the database.

A total of 10,351 records were produced during the three years of the project including 3632 reports, 135 report analytics, 2971 conference analytics in 268 conference proceedings, 1749 patents, 1126 journal articles from 90 journals, 231 books, 92 book analytics and 147 theses.

As a part of the project, Micromedia catalogued and abstracted a total of 1772 individual documents, mostly reports, from the CANMET library collection thus making a retrospective collection of Canadian energy technology report literature widely available.

RÉSUMÉ POUR LA DIRECTION

La base de données sur la technologie de l'énergie (ETDB) est une base de données multi-nationale qui contient de la littérature sur la technologie de l'énergie provenant de 11 pays. The Department of Energy américain (DOE) est l'éditeur et l'agent d'exploitation de cette base de données. En 1987, un projet a été entrepris sous l'égide du Centre Canadien de la Technologie des Minéraux et de l'Energie (CANMET) afin de fournir une contribution canadienne à cette base de données.

A cette fin, de la littérature technique sur l'énergie publiée au Canada a été acquise, cataloguée, indexée et résumée par Micromédia Ltée et soumise à l'agent d'exploitation sous une forme pouvant être lue automatiquement. La Division des Services de Bibliothèque et Documentation du CANMET est devenue le fournisseur de documents au Canada. Ce rapport décrit les trois premières années du projet.

Une base de données maison a été développée à Micromédia Ltée au cours de l'été de 1987 afin de produire des enregistrements pouvant être lus automatiquement selon les spécifications de cataloguage, d'indexation, de résumé et de production de bandes magnétiques développées au DOE. La production a commencé en Septembre 1987. Depuis lors, le système de base de données sur l'énergie a été modifié à de nombreuses reprises afin d'améliorer la qualité du produit et de facilites les procédures de production. En 1989, des révisions des règles de cataloguage de l'ETDB ont nécessité une révision substantielle de la base de donnés.

Au total, durant les trois années du projet, 10351 enregistrements ont été produits, comprenant 3632 rapports, 135 analyses de rapports, 2971 analyses de conférences prises dans 268 comptes-rendus de conférences, 1749 brevets, 1126 articles de journaux provenant de 90 journaux, 231 livres, 92 analyses de livres et 147 thèses.

Comme partie du projet, Micromédia a catalogué et résumé un total de 1772 documents individuels, principalement des rapports, provenant de la collection de la bibliothèque du CANMET, rendant ainsi largement disponible une collection rétrospective de rapports canadiens sur la technologie de l'énergie.

INTRODUCTION

The Energy Technology Database (ETDB) is a multinational database that contains energy technology literature from Canada, Denmark, the Federal Republic of Germany, Finland, Japan, the Netherlands, Norway, Spain, Sweden, the United Kingdom and the United States. The U.S. Department of Energy (DOE) is the operating agent for the database.

The purpose of this project was to produce Canada's contribution to this database. To this end technical energy literature published in Canada was acquired, catalogued, indexed, abstracted and submitted to the operating agent in machine readable form.

Types of materials collected included research reports, journal articles, monographs, patents, theses, and conference proceedings. The subject scope was defined so as to include documents which fit into the subject categories developed by the operating agent for the database. Excluded from this scope were documents on the topics of nuclear energy and coal. These documents were processed by other Canadian organizations.

PROJECT NARRATIVE

In July 1987, 3 members of the Energy Database Project travelled to Oak Ridge, Tennessee to work with the U.S. Department of Energy (DOE), the ETDE Operating Agent. These meetings provided comprehensive introductions to all facets of subject scope, cataloguing standards, abstracting and indexing requirements, and formats for magnetic tapes used when shipping data.

An in-house system was developed at Micromedia during the summer of 1987 to produce Canadian energy records implementing these cataloguing, indexing, and tape output specifications. A test tape was produced in August; production began in September.

Since that time the Energy database system has undergone numerous modifications to improve the quality of the output and to streamline production procedures. Automatic data validation checks were developed, error messages were added to assist the proofing procedure, thesauri were added, and several new files were added to support the acquisitions function.

In August 1989 DOE announced details of a revision to EDTE cataloguing rules. The implementation of these revisions involved a substantial rewrite of the main Energy file and of some ancillary files. Systems personnel were very cooperative in accommodating these unscheduled changes. These changes were implemented in time for preparation of our October 1989 tape.

In November 1989 a revision to the EDTE Categories and Scope Notes was also implemented. This involved the addition of a number of categories and the deletion of several. A number of the remaining categories were amended substantially. The overall result was a considerable improvement to the consistency and organization of the categories.

For each ETDE record in this collection, a unique accession number was added in a searchable field of the ETDE record. A matching external label was affixed to each corresponding document in this CANMET collection to facilitate physical organization and handling.

Quality control was accomplished by a combination of proofreading, computerized thesauri and value tables for data validation, and data crossloading from validated files. Automated computer checks have been devised to check for the presence of mandatory fields or field combinations, illegal characters, or overlength fields. The effectiveness of these quality controls was continuously monitored and new controls were added from time to time.

RETROSPECTIVE CANMET DOCUMENT ABSTRACTING PROJECT

As part of the project, Micromedia undertook the cataloguing, abstracting, and indexing of energy related documents in the CANMET library collection so as to ensure good retrospective coverage of Canadian energy report literature. These documents, mostly reports, were shipped to Micromedia from CANMET for processing. They were evaluated for compliance to EDTE scope, searched online in the DOE database to eliminate duplication and those remaining were processed and added to the database.

During the course of the project 2434 records were added in this way. This represented 1687 individual reports and 85 books and their analytics. The project was completed by the summer of 1989.

PRODUCTION SUMMARY

A total of 10351 records were produced over the life of this contract.
Record production levels by contract year are shown below.

1987	1850
1988	4393
1989	4108
Total	10351

Record production by publication date is summarized below:

1990	105
1989	1989
1988	2932
1987	2891
pre-1987	2434
Total	10351

Processing of 1987 and 1988 documents is essentially complete. The document numbers show that there are approximately 2900 energy related documents available for processing per year in Canada.

SUBJECT COVERAGE

The table below shows the percentage of documents submitted under this contract which fall into each of the subject categories provided by The U.S. Department of Energy for indexing of energy technology documents. Since several categories may sometimes be applied to a single document, the total of the percentages adds up to more than 100%.

The subject coverage of documents abstracted in this project serves as an overview of the subject coverage of energy research in Canada.

Category Name	Percent of documents
Energy Conversion, Efficiency, and Consumption (in buildings, transportation, industry and municipal systems)	19.8%
Petroleum	19.0%
Energy Planning and Policy	15.7%
Oil Sands and Oil Shales	9.9%
Natural Gas	9.9%
Environmental Sciences	8.8%
Engineering	8.6%
Biomass energy	7.2%
Electrical Power Distribution	3.6%
Peat and Coal	3.4%
Materials	3.2%
Geosciences	3.2%
Fossil-Fuelled Power Plants	2.9%
Solar Energy	2.7%
Advanced Propulsion Systems	2.6%
Hydro Energy	2.5%
Wind Energy	2.4%
Chemistry	1.8%
Biomedical Sciences	1.0%
Instrumentation	1.0%
Miscellaneous	6.2%

TYPES OF DOCUMENTS PROCESSED

Types of documents processed include, reports, books, conference proceedings, patents, theses, and journals. Analytic records were prepared for individually authored chapters in reports, books, and conference proceedings and journal articles.

Monographs

Document Type	Document Number
Reports	3632
Patents	1749
Conference Proceedings	268
Books	231
Theses	147

Analytics

Analytic Type	Document Number
Conference Analytics	2971
Journal Analytics	1126
Report Analytics	135
Book Analytics	92

JOURNAL COVERAGE

Articles were indexed from a total of 90 periodicals during the course of the project. Journal articles accounted for 10.9% of all documents processed in this project. Lists of these journals in alphabetical order and in order of productivity are provided in Appendix A.

CONFERENCE PROCEEDINGS

Conference proceedings and the analytics from conferences provided 31.3% of all records. A list of organizations which sponsored conferences covered during this period is given in Appendix B.

REPORTS

Reports and report analytics provided 36.0% of all records. A list of the organizations and government departments which were major sources of reports (provided more than 10 documents) is provided in Appendix C.

APPENDIX A Part 1

JOURNAL PRODUCTIVITY **Productivity Ranking**

Journal Title	Number
Journal of Canadian Petroleum Technology	194
Canadian Journal of Chemical Engineering	121
AOSTRA Journal of Research	91
Oilweek	50
Biojoule	45
Bulletin of Canadian Petroleum Geology	43
Pulp & Paper Canada	39
Canadian Journal of Forest Research	34
ARCTIC - Journal of the Arctic Inst. of North America	33
Environmental and Waste Management World	29
Canadian Journal of Physics	28
Energy Processing Canada	27
Canadian Journal of Fisheries and Aquatic Science	24
Ontario Energy Network	24
Energy Newsletter	21
CIVIC Public Works	19
CIM Bulletin	16
Canadian Journal of Civil Engineering	13
Engineering Digest	13
Pulp and Paper Journal	13
Canadian Geotechnical Journal	11
Energy Studies Review	11
Canadian Journal of Chemistry	10
Canadian Public Policy-Analysis	9

APPENDIX A Part 1 (cont.)

GEOS	9
Heavy Construction News	9
Journal of Microwave Power and Electromagnetic Energy	9
Canadian Geographer	8
Canadian Electrical Engineering Journal	7
Canadian Journal of Earth Sciences	6
Electricity Today	6
Island Bioenergy	6
Outlook Technical Bulletin	6
Sol	6
Spill Technology	6
Canadian Chemical News	5
Canadian Journal of Exploration Geophysics	5
Canadian Well Logging Society Journal	5
CPA Review	5
Alternatives	4
Canadian Construction Record	4
Canadian Water Resources Journal	4
Eastern Offshore News	4
Propane	4
Trans. Canadian Soc. for Mechanical Engineering	4
Water Pollution Research in Canada	4
Canadian Journal of Agricultural Economics	3
Canadian Journal of Economics	3
Canadian Journal of Microbiology	3
Canadian Public Administration	3

APPENDIX A Part 1 (cont.)

Canadian Research	3
Canadian Soc. of Petroleum Geologists Reservoir	3
Journal of Business Administration	3
Logging and Sawmilling Journal	3
Resources	3
World Oil Market Analysis	3
Canadian Cleaner & Launderer	2
Canadian Journal of Public Health	2
Canadian Journal of Soil Science	2
Canadian Journal of Veterinary Research	2
Canadian Mineralogist	2
Canadian Mining Journal	2
CMA Magazine	2
Energie au Quebec en Primeur	2
Episodes	2
Acadiensis	1
Alberta History	1
Canadian Automotive Training	1
Canadian Business	1
Canadian Consulting Engineer	1
Canadian Field Naturalist	1
Canadian Inst. of Food Science and Technology Journal	1
Canadian Metallurgical Quarterly	1
Canadian Mining and Metallurgical Bulletin	1
Design Engineering	1
Drillsite	1
Environments	1

APPENDIX A Part 1 (cont.)

Forestry Chronicle	1
International Perspective	1
Journal of Canadian Studies	1
Modern Purchasing	1
Newfoundland Studies	1
Ontario History	1
Pacific Affairs	1
PLAN Canada	1
Plant Engineering and Maintenance	1
Probe Post	1
Process Industries Canada	1
Queen's Quarterly	1
Water Quality Bulletin	1

APPENDIX A Part 2

JOURNAL PRODUCTIVITY **Alphabetical order**

Journal Title	Number
Acadiensis	1
Alberta History	1
Alternatives	4
AOSTRA Journal of Research	91
ARCTIC - Journal of the Arctic Inst. of North America	33
Biojoule	45
Bulletin of Canadian Petroleum Geology	43
Canadian Automotive Training	1
Canadian Business	1
Canadian Chemical News	5
Canadian Cleaner & Launderer	2
Canadian Construction Record	4
Canadian Consulting Engineer	1
Canadian Electrical Engineering Journal	7
Canadian Field Naturalist	1
Canadian Geographer	8
Canadian Geotechnical Journal	11
Canadian Inst. of Food Science and Technology Journal	1
Canadian Journal of Agricultural Economics	3
Canadian Journal of Chemical Engineering	121
Canadian Journal of Chemistry	10
Canadian Journal of Civil Engineering	13
Canadian Journal of Earth Sciences	6
Canadian Journal of Economics	3

APPENDIX A Part 2 (cont.)

Canadian Journal of Exploration Geophysics	5
Canadian Journal of Fisheries and Aquatic Science	24
Canadian Journal of Forest Research	34
Canadian Journal of Microbiology	3
Canadian Journal of Physics	28
Canadian Journal of Public Health	2
Canadian Journal of Soil Science	2
Canadian Journal of Veterinary Research	2
Canadian Metallurgical Quarterly	1
Canadian Mineralogist	2
Canadian Mining and Metallurgical Bulletin	1
Canadian Mining Journal	2
Canadian Public Administration	3
Canadian Public Policy-Analysis	9
Canadian Research	3
Canadian Soc. of Petroleum Geologists Reservoir	3
Canadian Water resources Journal	4
Canadian Well Logging Society Journal	5
CIM Bulletin	16
CIVIC Public Works	19
CMA Magazine	2
CPA Review	5

APPENDIX A Part 2

Design Engineering	1
Drillsite	1
Eastern Offshore News	4
Electricity Today	6
Energie au Quebec en Primeur	2
Energy Newsletter	21
Energy Processing Canada	27
Energy Studies Review	11
Engineering Digest	13
Environmental and Waste Management World	29
Environments	1
Episodes	2
Forestry Chronicle	1
GEOS	9
Heavy Construction News	9
International Perspective	1
Island Bioenergy	6
Journal of Business Administration	3
Journal of Canadian Petroleum Technology	194
Journal of Canadian Studies	1
Journal of Microwave Power and Electromagnetic Energy	9
Logging and Sawmilling Journal	3
Modern Purchasing	1
Newfoundland Studies	1
Oilweek	50

APPENDIX A Part 2 (cont.)

Ontario Energy Network	24
Ontario History	1
Outlook Technical Bulletin	6
Pacific Affairs	1
PLAN Canada	1
Plant Engineering and Maintenance	1
Probe Post	1
Process Industries Canada	1
Propane	4
Pulp and Paper Journal	13
Pulp & Paper Canada	39
Queen's Quarterly	1
Resources	3
Sol	6
Spill Technology	6
Trans. Canadian Soc. for Mechanical Engineering	4
Water Pollution Research in Canada	4
Water Quality Bulletin	1
World Oil Market Analysis	3

APPENDIX B

ORGANIZATIONAL SOURCES OF CONFERENCES

ACUNS (Association of Canadian Universities for Northern Studies)

Agriculture Canada, Ottawa, Ontario. Engineering & Statistical Inst.

Alberta Environment, Edmonton, AB (Canada). Environmental

Alberta Oil Sands Technology and Research Authority, Edmonton (Canada)

Alberta Research Council, Edmonton (Canada). Coal Research Dept.

Alberta/Canada Energy Resources Research Fund, Edmonton

Biomass Energy Inst., Inc., Winnipeg, Manitoba (Canada)

British Columbia Hydro, Vancouver (Canada)

Canada Centre for Mineral and Energy Technology, Ottawa

Canada/New Brunswick Agreement on Conservation and Alternate Energy Activities

Canadian Commission for UNESCO, Ottawa, Ontario

Canadian Forestry Service, Edmonton, Alberta. Northern Forest Research Centre

Canadian Forestry Service, Hull, PQ (Canada)

Canadian Gas Association, Don Mills, ON (Canada)

Canadian Gas Processors Suppliers Association, Calgary, AB

Canadian Heavy Oil Association, Calgary, AB (Canada)

Canadian Inst. of Resources Law, University of Calgary,

Canadian Institute or Mining and Metallurgy, Regina, SK

Canadian National Committee, World Energy Conference, Ottawa

Canadian Petroleum Association, Calgary, AB (Canada)

Canadian Society for Chemical Engineering, Ottawa, ON

Canadian Society of Petroleum Geologists, Calgary, Alberta

Canadian Well Logging Society, Calgary, AB (Canada)

Canadian Wind Energy Association, Ottawa, Ontario

APPENDIX B. (cont.)

Carleton Univ., Ottawa, Ontario (Canada). Geotechnical Sciences Labs.

Coal Mining Research Centre, Edmonton, Alberta (Canada)

Eastern Canadian Secretariat, Halifax, Nova Scotia (Canada)

Economics Society of Calgary, Calgary, AB (Canada)

Environment Canada, Ottawa, Ontario

Environment Canada, Ottawa, Ontario. Inland Waters Directorate

Environment Canada, Ottawa, Ontario. Water Quality Branch

Haztech Canada, Edmonton, AB (Canada)

Institut de Recherche de l'Hydro-Quebec, Varennes (Canada)

Intertask Ltd., Ottawa, Ontario (Canada)

Laurentian Univ., Sudbury, ON (Canada). Centre in Mining and Mineral Exploration

Manitoba Agriculture, Winnipeg, MB (Canada)

Memorial Univ. of Newfoundland, St. John's (Canada). Centre for Cold Ocean Resources Engineering

National Research Council of Canada, Ottawa, ON (Canada). Building Research

National Research Council of Canada, Ottawa, Ontario. Div. of Energy

New Brunswick Dept. of Natural Resources and Energy

Newfoundland Ocean Industries Association, St. John's, NF

Ontario Ministry of Energy, Toronto (Canada)

Ontario Ministry of Natural Resources, Aylmer, ON (Canada).

Ontario Ministry of the Environment, Toronto (Canada)

Ontario Ministry of Transportation and Communications, Ottawa (Canada)

Ontario Petroleum Institute, Inc., Chatham, ON (Canada)

Ontario Research Foundation, Sheridan Park, Mississauga

Ortech International, Mississauga, ON (Canada)

APPENDIX B (cont.)

Pallister Resource Management, Calgary, AB (Canada)

Petroleum Society of CIM

Public Works Canada, Ottawa, Ontario

Quebec Ministere de l'Environnement, Ste-Foy (Canada)

Saskatchewan Geological Society, Regina, SK (Canada)

Seaken Oceanography Ltd., Darthmouth, Nova Scotia (Canada)

Solar Energy Society of Canada, Inc., Winnipeg, Manitoba

SOQUIP, Quebec (Canada)

Southam Energy Group, Toronto, ON (Canada)

Stelco Inc., Hamilton, Ontario (Canada)

Texaco Canada Resources Ltd., Fort Mc Murray, Alberta

University of Calgary, Faculty of Continuing Education, Alberta (Canada).

University of Ottawa, Dept. of Mechanical Engineering, Ottawa, ON (Canada).

University of Saskatchewan, Saskatoon (Canada)

University of Toronto, Dept. of Chemical Engineering
and Applied Chemistry, Ontario (Canada).

Western Canada Water and Sewage, Calgary, AB (Canada)

Western Canada Water and Wastewater Association, Calgary, AB

APPENDIX C.

PRINCIPAL CORPORATE SOURCES OF REPORTS

Agriculture Canada

Alberta Energy

Alberta Oil Sands Technology Research Authority

Alberta Public Utilities Board

Alberta Research Council

B.C. Research

B.C. Hydro

B.C. Ministry of Energy

Canada Mortgage and Housing Corp.

Canadian Electrical Association

Canadian Energy Research Institute

Canadian Forestry Service

Canadian Gas Association

Coal Mining Research Centre

Dept. of Fisheries and Oceans

Dept. of Indian and Northern Affairs

Energy Mines and Resources

Energy, Mines and Resources, Canada Centre of Mineral and Energy Technology

Energy Resources Conservation Board

Environment Canada

Forintek Canada

Hydro Quebec

Institute de Recherche de Hydro Quebec

Laval University

Manitoba Dept. of Energy and Mines

National Energy Board

APPENDIX C (cont.)

National Research Council

Office national de l'energie

Ontario Energy Board

Ontario Hydro

Ontario Ministry of Energy

Ontario Ministry of the Environment

ORTECH (Ontario Research Foundation)

PACE (Petroleum Association of Conservation of the Canadian Environment)

Petro-Canada

Petroleum Recovery Institute

Public Works Canada

Quebec Ministere de l'Energie et des Ressources

Saskatchewan Dept. of Energy and Mines

Transport Canada